## Claims

What is claimed is:

1. A method for reconstructing a supply chain network, the method comprising the steps of:

determining, on a node-by-node basis, connections existing between nodes in the network by the steps of:

monitoring perturbations in an output of a node in the network;

computing a similarity measure between the output of the node and an output of one or more other nodes in the network; and

placing one or more putative connections based on the similarity measure.

2. The method of claim 1, wherein the placing step further comprises the steps of:

computing a similarity value; and

comparing the similarity value to a threshold value.

3. The method of claim 2, wherein the similarity value comprises a correlation value.

4. The method of claim 2, wherein the similarity value is less than the threshold value indicating that no connection exists.

5. The method of claim 1, further comprising the step of generating the perturbations.

6. The method of claim 1, wherein the perturbations are generated by external fluctuations.

7. The method of claim 1, wherein the perturbations comprise an increase in the output of the node.

8. The method of claim 1, wherein the perturbations comprise a decrease in the output of the node.

9. The method of claim 2, wherein the similarity value is calculated for a plurality of possible pairings of nodes in the network.

10. The method of claim 2, wherein the similarity value is calculated for a subset of possible pairings of nodes in the network.

11. The method of claim 1, further comprising the step of eliminating possible pairings of nodes in the network based on knowledge of the network precluding such pairings.

12. The method of claim 1, wherein each of the connections comprises an order corresponding to a minimum number of individual connections needed to traverse from the node to the one or more other nodes.

13. The method of claim 12, wherein the order is used to reduce false correlations.

14. The method of claim 13, wherein the false correlations comprise false positive correlations.

15. The method of claim 13, wherein the false correlations comprise false negative correlations.

16. The method of claim 13, wherein false correlations are reduced using triangle reduction.

17. The method of claim 12, wherein the order is used to reduce false correlations by distinguishing first order connections from all other order connections.

18. The method of claim 12, wherein the order is used to reduce false correlations by ignoring first order connections when a second order connection has a value greater than or equal to the first order connection.

19. The method of claim 1, wherein one or more of the connections in the network are hidden.

20. The method of claim 2, wherein the threshold value balances true positives with true negatives.

21. The method of claim 2, wherein the threshold value balances false positives with false negatives.

22. An apparatus for reconstructing a supply chain network, the apparatus comprising:

a memory; and

at least one processor operative to:

determine, on a node-by-node basis, connections existing between nodes in the network by the steps of:

monitoring perturbations in an output of a node in the network;

computing a similarity measure between the output of the node and an output of one or more other nodes in the network; and

placing one or more putative connections based on the similarity measure.

23. The apparatus of claim 22, wherein the at least one processor is further operative to:

compute a similarity value; and

compare the similarity value to a threshold value.

24. An article of manufacture for reconstructing a supply chain network, comprising:

a computer-readable medium having computer-readable code embodied thereon, the computer-readable code comprising:

a step to determine, on a node-by-node basis, connections existing between nodes in the network by the steps of:

monitoring perturbations in an output of a node in the network;

computing a similarity measure between the output of the node and an output of one or more other nodes in the network; and

placing one or more putative connections based on the similarity measure.